

1. A friction disk for a brake assembly comprising:
an annular structural core having at least one sinusoidally-shaped mounting surface; and
at least one frictional lining element having a sinusoidally-shaped mounting surface and a relatively, flat wear surface, said mounting surface of each frictional lining element matingly engaging said mounting surface of said structural core.
2. The friction disk according to claim 1, wherein said annular structural core is formed from strength-optimized carbon-carbon composite.
3. The friction disk according to claim 1, further comprising drive lugs on an inner diameter of said structural core for mounting to a stator of the brake assembly.
4. The friction disk according to claim 1, further comprising drive lugs on an outer diameter of said structural core for mounting to a rotor of the brake assembly.
5. The friction disk according to claim 1, wherein each friction lining element is formed from friction optimized carbon-carbon composite.

6. The friction disk according to claim 1, further comprising at least one mechanical fastener securing each friction lining element to said structural core.

7. The friction disk according to claim 2, wherein each friction lining element is formed from friction-optimized carbon-carbon composite.

8. The friction disk according to claim 7, wherein said friction disk is a stator disk, rotor disk or pressure plate.

9. The friction disk according to claim 2, wherein each wear surface includes a thermal barrier coating.

Please add the following additional claims:

18. A friction disk for a brake assembly comprising:
an annular structural core having a first sinusoidally-shaped mounting surface and a second sinusoidally-shaped mounting surface;
a first frictional lining element having a sinusoidally-shaped mounting surface and a relatively, flat wear surface, said mounting surface of said first frictional lining element matingly engaging said first mounting surface of said structural core; and

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a second frictional lining element having a sinusoidally-shaped mounting surface and a relatively, flat wear surface, said mounting surface of said second frictional lining element matingly engaging said second mounting surface of said structural core.

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19. The friction disk according to claim 18, wherein said annular structural core is formed from strength-optimized carbon-carbon composite.

20. The friction disk according to claim 18, further comprising drive lugs on at least one of an inner diameter of said structural core for mounting to a stator of the brake assembly and an outer diameter of said structural core for mounting to a rotor of the brake assembly.--
